

MARKIN, S.G., inzhener; SHTEPAN, V.Ye., inzhener.

Improved operation of boilers with heated hoppers. Elek.sta.27
no.1:51-52 Ja '56. (MLRA 9:6)
(Boilers)

AUTHOR: Markin, S.G., Engineer 117-100-10-11

TITLE: Socialist Competition in Maching Building Enterprises
(Sotsialisticheskoye sorevnovaniye na mashinostroyitel'nykh
predpriyatiyakh)

PERIODICAL: Mashinostroitel', 1958, Nr 5, p 35 (USSR)

ABSTRACT: A general review of the history of the socialistic rivalry principle is given. The various aspects of this competition, as used in the machine building industry, are then listed: improvements in techniques, organization, and equipment; economizing; completing the daily norm in seven hours, then using the eighth hour to "overfullfill". The rivalry is between sections, workshops and establishments, as well as between individual workers.

AVAILABLE: Library of Congress

Card 1/1 1. Machines-Development-USSR

MARKIN, S.G., inzh.; POPOV, V.P., inzh.; SHTEYMAN, V.Ye., inzh.

Operation of once-through wet-slugging boilers on anthracite culm.
Elek. sta. 29 no.4:7-11 Ap '58. (MIRA 11:8)
(Boilers)

MARKIN, S.G.

Mass movement for communist labor. Mashinostroitel' no.1:26-27
Ja '61. (NEFA 14:3)

(Efficiency, Industrial)

MARKIN, S. P.: Master's Thesis (1968) -- "Changes in the concentration of the blood serum of cancer patients under the influence of chemotherapy". Moscow, 1968. 14 pp. (Ministry of Health of the USSR, Moscow Medical Stomatological Inst.), copies (KL, No. , 1968, 1969).

MARKIN, S.P. (Moskva)

Effect of hemotherapy on carcinolytic properties of serum in cancer patients [with summary in English]. Pat.fiziol. i eksp. terap. 2 no.3:31-36 My-Je '58 (MIRA 11:7)

1. Iz Tsentral'nogo ordena Lenina instituta gematologii i perelivaniya krovi (direktor - deystvitel'nyy chlen AMN SSSR prof. A.A. Bagdasarov).

(NEOPLASMS, blood in,
carcinolytic properties, eff. of hemother. (Rus))
(SEROETHERAPY,
hemother., eff. on carcinolytic properties of serum
in cancer patients (Rus))
(BLOOD,
antitumor properties, eff. of hemother. (Rus))

TIKHONOVICH, G.S., kand.med.nauk; MARKIN, S.P.

Clinical aspects of Hirschprung's disease. Terap.arkh. no.6:
56-60 '62. (MIRA 15:9)

1. Iz 1-y kafedry terapii (zav. - prof. A.Z. Chernov) i 1-y
kafedry khirurgii (zav. - prof. B.S. Romanov) TSentral'noho
instituta usovershenstvovaniya vrachey.
(COLON--ABNORMITIES AND DEFORMITIES)

DYUSKALIYEV, D.D.; MARKIN, S.F., kand. med. nauk

Fat metabolism in dumping syndrome patients and its changes
following gastrojejunoduodenoplasty. Khirurgiya 40 no.8:43-49
Ag '64. (MIRA 18:3)

1. Kafedra meditsinskoy radiologii (zav. - prof. V.K. Modestov)
i 1-ya kafedra khirurgii (zav. - prof. B.S. Rozanov) Tsentral'-
nogo instituta usovershenstvovaniya vrachey i Klinicheskoy ordena
Lenina bol'nitsy imeni Botkina (glavnyy vrach - dotsent Yu.G.
Antonov), Moskva.

MARKIN, S.P., kand. med. nauk; NIKITINA, R.G.

Preliminary report on the results of the study of the functional state of the liver with the aid of I^{131} -tagged rose bengal in surgical patients. Trudy TSIU 71:189-193 '64. (MIK 18:6)

1. Kafedra khirurgii (zav. prof. zasluzhennyy deyatel' nauki E.S. Rozanov) i kafedra meditsinskoy radiologii (zav. prof. V.K. Modestov) Tsentral'nogo instituta usovershenstvovaniya vrachev.

PUSHKIN, P.S., kand.tekhn.nauk, dotsent; YAKIMENKO, A.D., inzh.;
CHEMBAROV, M.I., inzh.; MARKIN, S.S., inzh.; PARASHINA, T.G.,
inzh.; ALEKSEYEVA, N.N., inzh.; POLYAKOVA, L.N., inzh.

Labor productivity potentials and growth factors in the
artificial leather industry during the current seven year
period. Izv.vys.ucheb.zav.;tekh.leg.prom. no.2:31-38

'62.

(MIRA 15:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut plenochnykh
materialov i iskusstvennoy kozhi. Rekomendovana kafedroy
ekonomiki promyshlennosti i organizatsii proizvodstva
Kiyevskogo tekhnologicheskogo instituta [redacted] promyshlennosti.
(Leather industry--Labor productivity)

WALSH, J. W. Gen'l Insp. -- also "Director of the Bureau of the General Inspection of the U.S. Army" --
 Titled of the "General Inspection of the U.S. Army" --
 steels under the rolling and press-working processes." Es, 1911.

[illegible]

For the first time, a 100% reduction in the number of deaths was achieved in 1997.

11. 11. 1941

L 27702-66 JT

ACC NR: AP6018407

SOURCE CODE: UR/0286/65/000/017/0069/0069

INVENTOR: Markin, S. V.; Prosvirin, K. V.

22
B

ORG: Central Scientific Research Institute of Technology and Machine Building
(Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya)

TITLE: Die steel, Class 40, № 174367

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 69

TOPIC TAGS: die, steel, solid mechanical property

ABSTRACT: A new die steel with improved mechanical properties is proposed which has the following chemical composition: 0.4-0.5 C, 0.4-0.6 Si, 0.4-0.6 Mn, 2.0-2.5 Cr, 0.8-1.2 Mo, 1.8-2.5 W, 0.6-0.8 V, 0.03 S, 0.03 P. [JPRS]

SUB CODE: 11, 13, 20 / SUBM DATE: none

Card 1/1 CC

UDC: 669.14.018.254

MARKIN, S.V.

Technical specifications for rolling-mill rolls. Standartizatsiia
24 no.11:32-35 N '60. (MIRA 13:11)
(Rolls (Iron mills)--Standards)

MARKIN, S.V., kand. tekhn. nauk; KRICHEVSKIY, Ya.M., red.; KOVAL'SKAYA, I.F.,
tekhn. red.

[Manufacture and use of steel rolls for structural and merchant mills;
survey] Proizvodstvo i primeneniye stal'nykh valkov dlia sortovykh
stanov; obzor. Moskva, Tsentrl in-t nauchno-tekhn. informatsii ma-
shinostroeniya, 1961. 37 p. (MIRA 14:11)

(Rolls (Iron mills))

L 64371-65 EWT(d)/EWT(m)/EWP(w)/EWA(d)/EWP(v)/I/EWP(t)/EWP(k)/EWP(h)/EWP(z)/EWP(b)/
EWP(1) MJ/JD

ACCESSION NR: AP5018543

UR/0182/65/000/007/0001/0005
621.984.5

AUTHORS: Markin, S. V.; Prosvirin, K. V.; Shevelov, A. Ye.

TITLE: New high strength die steels for hot forming

SOURCE: Kuznechno-shtampovochnoye proizvodstvo, no. 7, 1965, 1-5

TOPIC TAGS: die steel, tool steel, steel alloy, steel property/ 45Kh2SV2MF steel alloy, 40Kh2SVMFYu steel alloy, 3KhV4SF steel alloy, 25Kh2M2FIN steel alloy, 3Kh2V8 steel alloy, 4Kh2V5FM steel alloy

ABSTRACT: Results are presented of laboratory and industrial tests of die steels 40Kh2SVMFYu and 45Kh2SV2MF developed by the authors based on steels 3KhV4SF, 4Kh2V5FM and 25Kh2M2FIN. Seven different alloys (12 kg of each) were prepared and tested at the Moskovskiy avtozavod im. Likhacheva (Moscow Motorcar Factory) as dies for hot forging of automobile valves made of 40Kh steel. After testing these seven alloys, five new alloys (based on the previous results) were prepared and tested. It was found that steels 40Kh2SVMFYu (0.43% C, 0.5 Si, 0.5 Mn, 2.8 Cr, 1.28 W, 0.9 Mo, 0.71 V, 0.6 Al) and 45Kh2SV2MF (same as previous except 2.53% W, 0.97 Mo, 0.73 V, 0.0 Al, 0.5 C) were most durable, having the following physical properties respectively: at 200 - $\sigma_b = 186$ and 205 kg/mm^2 , $a_k = 3.2, 3.0 \text{ kgm/cm}^2$; at 450C -

L 64371-65

ACCESSION NR: AP5018543

$\sigma_b = 164, 178, \sigma_s = 149, 159, \gamma = 8.6, 14.2\%, \delta = 4.6, 5.0\%, a_k = 4.3, 3.1$ at 650C - 102, 88; 85, 83; 43, 37; 8.7, 7.0; 4.5, 4.3 for $\sigma_b, \sigma_s, \gamma, \delta, a_k$ respectively (after quenching in oil from 1100C and two-hour annealing at 580C). Hardness after nitriding was found to be 340 and 363 RC at 650C and 187 and 187 RC at 700C. [Abstracter's Note: These values seem unreasonable but are given in Table 6 in the paper] These steels were found to be superior to steel 3Kh2V8 which is 2-3 times more expensive than the experimental alloys. Orig. art. has: 6 tables and 2 figures.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MM

NO REF SOV: 000

OTHER: 000

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Card 2/2

L 2774-66 EWT(m)/EWA(d)/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(h)/EWA(o)/ JD/HW

ACCESSION NR: AP5022012

UR/0288/65/000/014/0080/0080
689.14.08.258

AUTHOR: Markin, S. V.; Tutov, I. Ye.; Prosvirin, K. V.; Shevlev, A. Ye.; Belkov,
G. N.; Zemnukhov, I. F.

TITLE: A steel for pressing, Class 40, No. 173007

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 14, 1965, 80

TOPIC TAGS: alloy steel, tungsten steel, chromium steel

ABSTRACT: This Author's Certificate introduces a steel for pressing which contains carbon, silicon, manganese, chromium, molybdenum, vanadium, tungsten and aluminum. The mechanical properties of the steel are improved by using the following composition (in %): 0.37-0.45 carbon; 0.4-0.6 silicon; 0.5-0.7 manganese, 2.5-3.0 chromium; 0.9-1.2 molybdenum; 0.6-0.8 vanadium; 1.0-1.4 tungsten; 0.4-0.6 aluminum.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya (Central Scientific Research Institute of Technology and Machine Building)

SUBMITTED: 07Feb64

ENCL: 00

SUB CODE: MM

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OTHER: 000

Cord1/1

MARKIN, V.

How to eliminate "bald spots"? Za bezop.dvizh. 5 no.2:11 F '68.
(MIRA 16:2)

(Tires, Rubber)

ZUBAREV, V.N., kand.tekhn.nauk; MARKIN, V.A., inzh.

Id-diagram of moist air for pressures of 1 to 15 kg./cm.²
Teploenergetika 8 no.7:50-53 J1 '61. (MIRA 14:9)

1. Moskovskiy energiticheskiy institut.
(Compressed air tables, calculations, etc.)

MARKIN, V.A.; AVSYUK, G.A., otv.red.; OGANOVSKIY, P.N., red.

[Franz Josef Land; meteorology] Zemlia Frantsa-Iosifa;
meteorologiya. Moskva. (Materialy glitsicologicheskikh issledo-
vaniy). No.3. [Actinometric observations] Aktinometricheskie
nabliudeniya. 1960. 134 p. No.4. [Actinometric observations]
Aktinometricheskie nabliudeniya. 1960. 148 p.

(MIRA 14:3)

1. Akademiya nauk SSSR. Institut geografii.
(Franz Josef Land--Solar radiation)

MARKIN, V.A.

Aureole on Franz Joseph's Land. Priroda 49 no.9:108-109 S '60.
(MIRA 13:10)

1. Institut geografii AN SSSR, Moskva.
(Optical illusions)

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4.1 k calories/cm² - 0.1 k calories/cm² = 4.0 k calories/cm² for the 4 months of the year (September-April). The yearly total of the radiation balance is negative (-0.1 k calories/cm²) for the 4 months of the year (September-April). Its yearly total of the radiation balance is positive (+0.1 k calories/cm²) for the 4 months of the year (May-August). The yearly total of the radiation balance amounted to 2.0 k calories/cm². [Abstracter's note: 0.1 k calories/cm² translation.]

Card 3/3

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MARKIN, V.A.; AVSYUK, G.A.; OGANOVSKIY, P.N., red.

[Franz Josef Land: Meteorology] Zemlia Frantsa-Iosifa: Meteorologiya. Moskva, (Its: Materialy glatsiologicheskikh issledovaniy) No.5. [Gradient observations] Gradientnye nabludeniya. 1962. 179 p. (MIRA 16:3)

1. Akademiya nauk SSSR. Institut geografii.
(Franz Josef Land--Meteorology--Observations)

MARKIN, V.A.

Basic features of the radiation regime of glaciers on Franz Josef
Land. Meteor. i gidrol. no.2:23-27 F '62. (MIRA 15:2)
(Franz Josef Land--Albedo)

MARKIN, Vyacheslav Alekseyevich; AVSYUK, G.A., otv. red.;
BOL'SHAKOV, V.P., red.izd-va; GUSEVA, A.F., tekhn.rec.

[In the land of glacial domes] V strane ledianykh kupolov.
Moskva, Izd-vo AN SSSR, 1963. 180 p. (MIRA 17:2)

MARKIN, V.A.; SUKHODROVSKIY, V.L.

Recent data on the contemporaneous glaciation of Franz Josef
Land. Dokl. AN SSSR 148 no.3:658-660 Ja '63. (MIRA 16:2)

1. Institut geografii AN SSSR. Predstavleno akademikom
D.I. Shcherbakovym.
(Franz Josef Land—Glaciers)

MARKED V D

PAGE : NON ENFANTINE 807/5452

Dunko, Yu. Ye., G.I. Karabash, and I.P. Lyubov, eds.

Mechanization and Automation. Short study of types and trends in the transition from manual to automatic control in the field of mechanical engineering. (Mechanization and Automation. Collection of Articles on the Introduction of Mechanization and Automation in the Field of Mechanical Engineering. [Khar'kov].)

Khar'kovskoye izdatel'stvo, 1970. 373 p. 3,000 copies printed.

Editorial Board: S.A. Vorob'yev, Candidate of Technical Sciences, Chairman of the Editorial Board; P.I. Izrael, Engineer, A.A. Kabanov, Engineer, the Editorial Board; A. Ye. Lebedev, Doctor, A.G. Pustitsyn, Candidate of Technical Sciences, V.I. Kuznetsov, Engineer, A. Ye. Lebedev, Doctor, A.G. Pustitsyn, Candidate of Technical Sciences, and S.M. Khramov, Candidate of Technical Sciences. Eds.: M.I. Litmanova, Ye. Ye. Donatsky, G.I. Karabash, and I.P. Lyubov. Tech. Eds.: M.I. Litmanova, Ye. Ye. Donatsky, G.I. Karabash, and I.P. Lyubov.

PURPOSE: This collection of articles is intended for technical and scientific personnel, outstanding workers, and as a source of communist labor.

COVERAGE: The multifaceted experience of Khar'kov enterprises in the mechanization, automation, and improvement of manufacturing processes is generalized. The development of new machines, instruments, and production methods is considered and attention is given to newly established enterprises, and to the introduction of tele-mechanics in the Khar'kov gas system management. By including concrete examples and facts, the authors of the Khar'kov industrial articles attempt to demonstrate the results of the work (1970) and July (1971) in fulfilling the resolution of the June (1970) and July (1971) Plenums of the Central Committee of the Communist Party of the Soviet Union. No personalities are mentioned. There are no references.

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AVAILABLE: Library of Congress (TJ151 .D54)	

MARKIN, V. F.

PA 248T85

USSR/Engineering - Automatic Control
Gas Turbines

Dec 52

"Certain Problems of Regulating Gas Turbines."
Cand Tech Sci V. F. Markin, Moscow Power Eng Inst

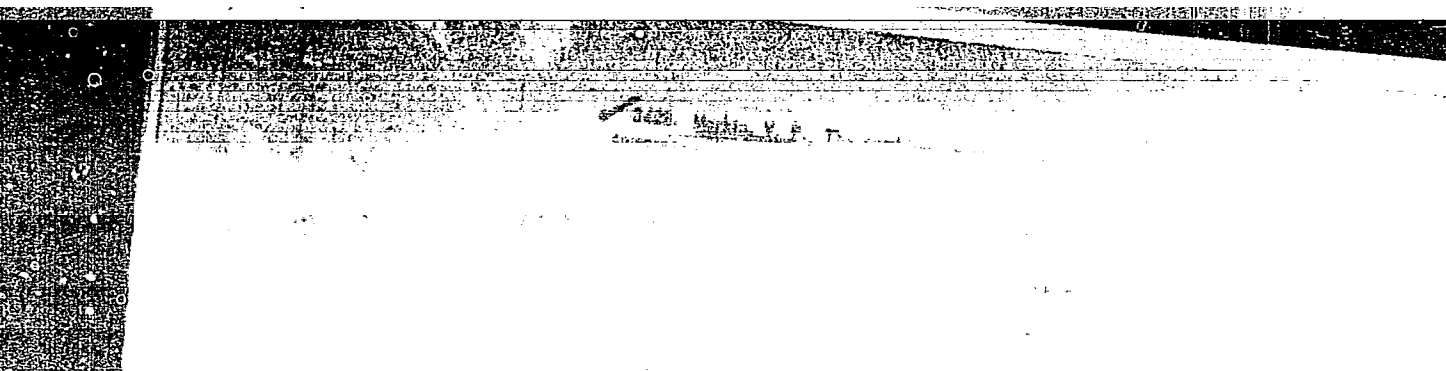
Iz V-S Teplotekh Inst, No 12, pp 7-12

Investigates dynamics of regulation process for
2 gas turbine installations: single-shaft plant
with noncontrolled air consumption and two-shaft
plant with controlled air consumption and with
stage combustion. For sake of simplicity both
plants were considered without regeneration.

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CIA-RDP86-00513R001032420006-3"

MIZERI, A.A., dets., kand. tekhn. nauk; MARKIN, V.F.; KLIMCHUK, A.V.

Cermet bearings with capillary lubrication for automatic looms.
Tekst. prom. 19 no.5:51-55 My '59. (MIRA 12:10)

1.Moskovskiy tekstil'nyy institut (for Mizeri). 2.Glavnyy konstruktor
Klimovskogo mashinostroitel'nogo zavoda (for Markin). 3.Glavnyy
mekhanik Novotkatskoy fabriki Glukhovskogo khlopchatobumazhnogo
kombinata (for Klimchuk).
(Looms)

S/096/63/000/003/006/010
E194/E455

AUTHORS: Markin, V.F., Candidate of Technical Sciences,
Gutkin, I.A., Engineer, Kostyuk, A.G., Candidate of Technical
Sciences, Shifrin, Ye.L., Engineer

TITLE: The influence of transient heat-exchange on the
process of regulating gas-turbine sets

PERIODICAL: Teploenergetika, no.3, 1963, 38-42

TEXT: In governing a gas turbine it is not the amount of gas flow which is regulated (as is the case in a steam turbine) but the amount of heat applied to the flow. Under steady-state conditions a steady temperature distribution is achieved between the various parts of the gas duct and the gas flowing through it. However, under transient conditions, the gas duct may either give up heat to the gas or extract heat from it, thus temporarily modifying the influence of the regulator. This effect can be of considerable practical significance. The differential equation for a gas-turbine regenerator is derived in the form

$$\frac{d\theta}{dz} = \frac{p}{\tau_p} + \frac{\theta}{\tau_\theta} + \frac{\gamma}{\tau_\gamma} + \frac{\rho}{\tau_\rho} \quad (8)$$

Card 1/3

The influence of transient ...

S/096/63/000/003/006/010
E194/E455

where $\theta = \Delta T_g / T_{g0}$; $\kappa = \Delta B / B_0$; $\nu = \Delta G / G_0$; $\rho = \Delta \epsilon / \epsilon_0$;
 T_g - air temperature beyond regenerator, °K; B - rate of fuel consumption; G - rate of air consumption, ϵ - compression ratio. This equation was used to calculate the effect when a turbine picks up load and it is shown that because of transient cooling in the regenerator the temporary loss of output is greater than it otherwise would be. The problem cannot be overcome by increasing the regulator speed but a solution may be achieved by temporary over-regulation. The device used by the "Ekonomayzer" Works to achieve such temporary over-regulation of a gas turbine type ГТУ-6 (GTU-6) is then described. In basic principle there is only one fuel-control valve, which over-travels in the first stage of the transient process and gradually returns to the correct setting. Two servo-motors are used in the regulator. Comparative test results on a gas turbine type GTU-6 with the normal regulator and with this special one are quoted for cases of picking up and throwing off 100% load. There is a substantial improvement in performance with the new regulator. The use of temporary over-regulation avoids the need to alter the

Card 2/3

The influence of transient ...

S/096/63/000/003/006/010
E194/E455

static characteristics of the regulation system; perfection has not yet been achieved but further improvement is possible. It should be noted that a regenerator does not always distort the transient process, but only in such cases when at different loads the temperature gradient between the regenerator wall and gas changes markedly. The greatest change occurs in gas turbines in which a compressor of flat characteristic runs at approximately constant speed. The main criterion in assessing the probable influence of the regenerator on the transient process is the gas temperature beyond the turbine. The more this changes on change of load the greater the influence of the regenerator on the transient process. There are 5 figures.

ASSOCIATION: Moskovskiy energeticheskiy institut - zavod
"Ekonomayzer" (Moscow Power Engineering Institute -
"Ekonomayzer" Works)

Card 3/3

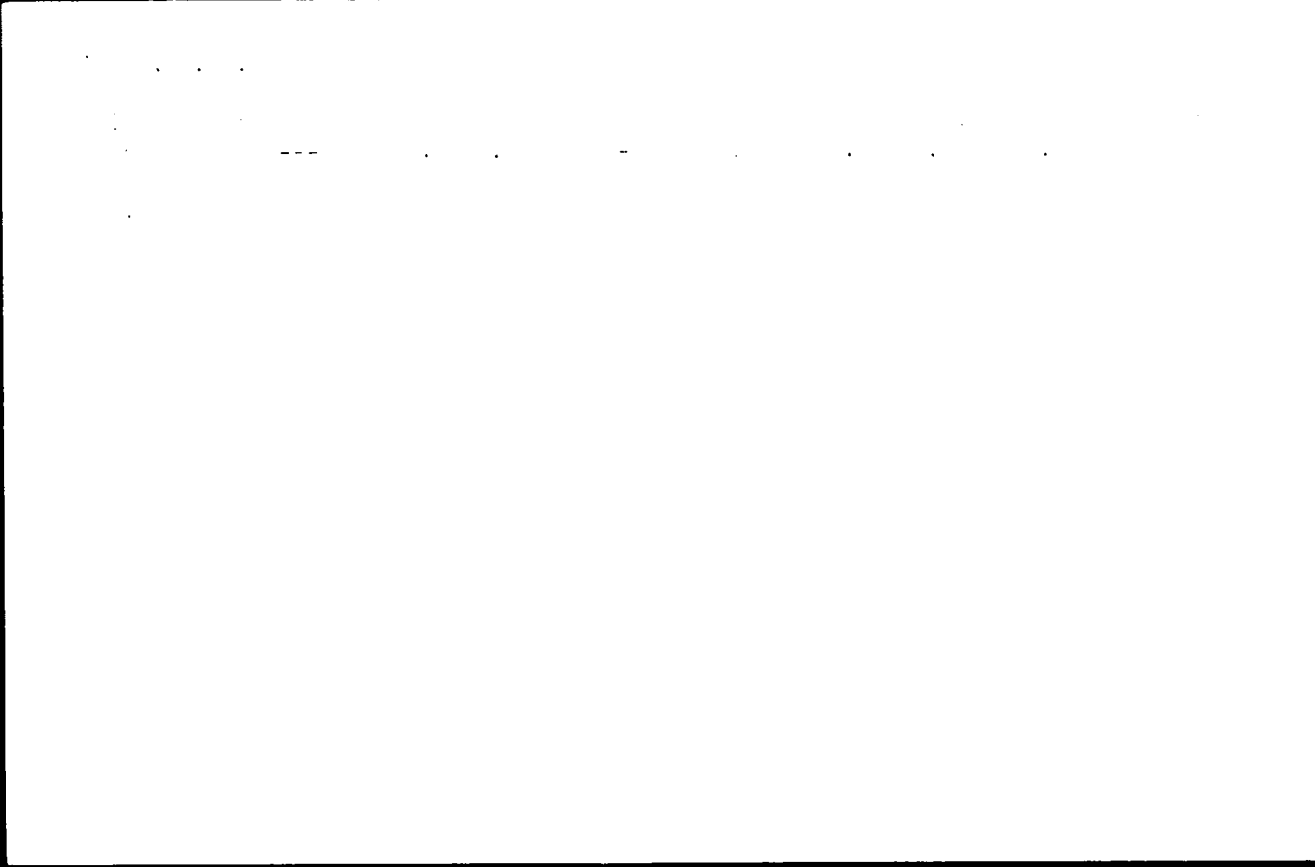
MARKIN, V.I., inzhener; SHAPOSHNIKOV, A.K., inzhener.

Technology of screening iron ores in blast-furnace plants.
Metallurg no.6:12-14 Jo '56. (MIRA 9:9)

1.Chelyabinskiy metallurgicheskiy zavod.
(Iron ores) (Chelyabinsk--Blast furnaces)

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CIA-RDP86-00513R001032420006-3"

MARKIN, Vasilii Ivanovich BERNYAGINA, V.V., redaktor. RABOVITSKIY, I.I.,
tekhnicheskii redaktor.

Uchebnoe posobie po prirodoznaniyu dlya shkolnykh i lyubitel'skikh kursov. (A natural sciences book for schools;
a manual for teachers) Ob"iasnitel'noe chtenie po estestvoznaniyu v
nachal'noi shkole; posobie dlia uchitelei. Izd. 2-oe, ispr. i dop.
Leningrad, Gos.uchebno-pedagog. izd-vo M-va prosv. RSFSR, Leningr.
otd-nie, 1957. 202 p. (MLRA 10:10)
(Nature study)

MARKIN, Vladimir Ivanovich, inzh.; KUTYLOVSKIY, Mikhail Petrovich, dotsent,
kand.tekhn.nauk; MOROZOVA, G.F., red.; FEDOTOVA, A.F., tekhn.red.;
PONOMAREVA, A.A., tekhn.red.

[Manual training in school shops; a textbook for teachers in
grades five to seven of secondary schools] Prakticheskie
zaniatiia v shkol'nykh uchebnykh masterskikh; uchebno-tekhnicheskoe
posobie dlia prepodavatelei V-VII klassov srednei
shkoly. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv. RSFSR,
1958. 391 p. (MIRA 12:2)

(Manual training)

MARKIN, V.K.

Communication apparatus at way stations. Avtom., telemek. svyaz'
4 no.3:32-33 M '60. (MIRA 13:7)

1. Zamestitel' nachal'nika Tul'skoy distantzii signalizatsii i
svyazi Moskovskoy dorogi.
(Railroads--Communication systems)

MARKIN, V.K.

Improve the quality of the district communication systems. Avtom.,
telem. i sviaz' 5 no.4:28 Ap '61. (MIRA 14:6)

1. Zamestitel' nachal'nika Tul'skoy distantzii signalizatsii i
svyazi Moskovskoy dorogi.
(Railroads—Communication systems)

MARKIN, V.K.

Automatic line and track communication. Avtom., telem. i svyaz'
7 no.12:30-39 E '63. 'MIR' 17:1

1. Zamestitel' nachal'nika Tul'skoy distantssii signalizatsii
svyazi Moskovskoy dorogi.

MARKIN, V.N., LOBANTOVA, G.N., TOKRUD, M.L. (Moscow)

Crystal chemistry of vanadium compounds. Part 1. Synthesis and properties of compounds of vanadium (V) compounds of vanadium (V). Vol. 1. Moscow, 1975. 112 p.

USHAKOVA, M.T.; YEFIMOV, A.Z.; MARKIN, V.P.

Use of industrial nicotinic acid in animal husbandry. Trudy
VNIVI 8:79-82 '61. (MIRA 14:9)

1. Laboratoriya biologicheskikh ispytaniy i novykh form vitaminov
Vsesoyuznogo nauchno-issledovatel'skogo vitaminного instituta.
(Nicotinic acid--Physiological effect) (Feeds)

MARKINA, V. P., dotsent

Cesarean section in the lower segment with suprapubic incision
of the abdominal wall. Akush. i gin. no.2:68-73 '62.

(MIRA 15:6)

1. Iz kafedry akusherstva i ginekologii (zav. - zasluzhennyy
deyatel' nauki prof. V. A. Pokrovskiy) Voronezhskogo meditsinskogo
instituta.

(CESAREAN SECTION)

VAYTSMAN, V.M., inzh.; VNUKOV, A.K., kand.tekhn.nauk; MARKIN, V.P., inzh.

Automation of the charging of fuel into ball mills. Elek.sta.29
no.3:85 Mr '58. (MIRA 11:5)
(Pulverizers)

NEVEL'SON, S.P., kand.tekhn.nauk; PROKOPENKO, A.G., inzh.; MARKIN, V.P.,
inzh.; SHUMSEVA, L.S., kand.tekhn.nauk

Boiler and turbine unit with a 100-milliwatt power rating operat-
ings under varying conditions . Elek.sta. no.7:5-15 JI '60.

(MIRA 13:8)

(Steam turbines) (Boilers) (Turbogenerators)

KOINOVALOV, G.M., inzh.; KIRSH, A.K., inzh.; MARKIN, V.P., inzh.

Economic aspects of the type VET-100 steam turbine built at the
Kharkov works. Teploenergetika 7 no.3:73-80 Apr '60.
(MIRA 1960)

1. Gosudarstvennyy trest po organizatsii i ratsionalizatsii
elektrostantsiy i Dneproenergo.
(Steam turbines)

NEVEL'SON, S.P., kand.tekhn.nauk; PROKOPENKO, A.G., inzh.; MARKIN,
V.P., inzh.; TERENKAL', V.R., inzh.

Thermal characteristics of a 100 megawatt turbine-boiler
unit. Elek.sta. 31 no.5:6-11 My '60.

(MIRA 13:8)

(Electric power plants—Equipment and supplies)

NEVEL'SON, S.P., kand.tekhn.nauk; MARKIN, V.P., inzh.; TERENCEKAL', V.R.,
inzh.

Certain thermal characteristics of the TP-70 boiler operating
on natural gas in system with a turbine. Elek. sta. 31 no.
8:2-4 Ag '60. (MIRA 14:9)

(Boilers) (Steam turbines)

GUSEV, V.N., inzh.; MARKIN, V.P., inzh.; TEREKAL', V.R., inzh.;
SHE'YAKIN, P.A., inzh.

Adjustment and test results of the TP-70 boiler operating on
natural gas. Energomashinostroenie 7 no.7:1-5 J1 '61.

(MIRA 14:8)

(Boilers Testing)

PROKOPENKO, A.G., inzh.; LAZARENKO, A.V., inzh.; MARKIN, V.P., inzh.

Starting conditions and temperature state of the VKT-100 turbine.
Teploenergetika 8 no.5:17-24 My '61. (MIRA 14:8)
(Steam turbines)

BERMAN, L.D., doktor tekhn.nauk; MARKIN, V.P., inzh.; PROKHOROVA, Ye.I.,
inzh.; IL'ICHEVA, L.A., inzh.

Use of double tube plates in steam turbine condensers. Teploe-
nergetika 8 no.7:24-29 J1 '61. (MIRA 14:9)

1. Vsesoyuznyy teplotekhnicheskiy institut i Pridneprovskaya
Gosudarstvennaya rayonnaya elektricheskaya stantsiya.
(Steam turbines) (Condensers (Steam))

SUCHKOV, V.I.; MARKIL, V.I., otv. red.

[Thermophysical values; reference data for the design of metallurgical furnaces. Teplofizicheskie velichiny: Spravochnye dannye dlia proektirovaniia metallurgicheskikh pechei. Sverdlovsk, Ural'skii politehn. in-t S.P.Kirova, 1963. 38 p. (LIBA 17:7)]

L 22563-66

ACC NR: AP6012931

SOURCE CODE: UR/0104/65/000/007/0007/0015

AUTHOR: Markin, V. P. (Engineer); Rtishchev, S. P. (Engineer); Yakovlev, G. G. (Engineer)

19
B

ORG: none

TITLE: Results of startup and adjusting operations on the 300 Mw power unit

SOURCE: Elektricheskiye stantsii, no. 7, 1965, 7-15

TOPIC TAGS: power plant component, steam boiler

ABSTRACT: Results are presented from startup and tuning of the 300 Mw power unit at the Pridneprovskiy power plant. All the main equipment as well as the greater part of the supplementary equipment are new models. The article describes the equipment in detail, presents the thermal plan of the unit, then goes on to describe the prestart operations, publication of documents for training of service personnel, checking and installation of equipment, preliminary testing, etc. Chemical cleaning of the equipment removed 7,000 kg of iron oxide from the boilers, etc. Graphs of the temperatures and pressures encountered versus time during the startup operations are presented. The authors recommend that chemical cleaning be accomplished in such equipment with high flow rates, that the steam pipes of the boiler be blown out with externally supplied steam. Flow reversal in individual coils was not fully

Cord 1/2

UDC: 621.311.22.004

L 22563-66

ACC NR: AP6012931

eliminated. The authors call for further work in this direction. Considerable difficulties were encountered in firing the boiler after short time standing. Orig. art. has: 5 figures. [JPRS]

SUB CODE: 10, 13 / SUBM DATE: none

Card 2/2

BK

MARKIN, V. S.; PSHENICHNIKOV, A. G.; CHIZMADZHEV, I. A.; CHIRKOV, Yu. G.;
BURSHTEYN, R. Kh.

"Investigation of the Relationship between the Structure and the
Electrochemical Properties of a Porous Gas Electrode."

Report presented at the 11th meeting CITCE, Intl. Comm. of Electrochemical
Thermodynamics and Kinetics, Moscow, 19-25 Aug 63.

Institute of Electrochemistry, Academy of Sciences of USSR.

MARKIN, V.S.

On the properties of interface boundary in one model of porous material. Izv. AN SSSR. Ser.khim. no.9:1690-1692 S '63.
(MIRA 16:7)

1. Institut elektrokhimii AN SSSR.
(Porous materials) (Boundary layer)

MARKIN, V.S.

Capillary equilibrium in a model of branching pores with varying cross sections. Izv. AN SSSR. Ser. khim. no.11:1923-1933 N 113.
(MIRA 17:1)

1. Institut elektrokhemii AN SSSR.

LEVICH, V.G.; MARKIN, V.S.; CHIRKOV, Yu.G.

Electric conductivity and electron paramagnetic resonance signal
in polymeric materials built up of molecules with conjugate double
bonds. Dokl. AN SSSR 149 no.4:894-896 Ap '63. (MIRA 16:3)

1. Institut elektrokhemii AN SSSR. 2. Chlen-korrespondent AN SSSR
(for Levich).
(Polymers—Electric properties)
(Electron paramagnetic resonance and relaxation)

MARKIN, V.S.; CHIZMADZHEV, Yu.A.; CHIRKOV, Yu.G.

Theory of porous gas electrodes. Computation of effective coefficients. Dokl. AN SSSR 150 no. 3:596-599 My '63.

(MIRA 16:6)

1. Institut elektrokhemii AN SSSR. Predstavleno akademikom A.N. Frumkinym.

(Electrodes) (Porous materials)

MARKIN, V.D.

capillary equilibrium in porous media. Report 1: Formulation
of the problem and derivation of equations. Izv. AN SSSR. Ser.
Fizim. no.9:1523-1530 '65. (MIRA 18:9)

1. Institut elektrokhimii AN SSSR.

MARKIN, V.S.

Capillary electrophoresis (CE) is a technique for separating and analyzing mixtures of ions. It is based on the principle of electrophoresis, where ions migrate through a capillary tube under the influence of an electric field. The separation is achieved by differences in the ions' electrophoretic mobility, which is determined by their charge and size. CE is widely used in analytical chemistry for the separation of complex mixtures, such as amino acids, peptides, and nucleic acids. It offers high resolution and efficiency, making it a valuable tool in various scientific fields.

1. Institute of Chemistry, USSR Academy of Sciences.

MARKIN, V.S.

Capillary equilibrium in porous media. Report No.3:
Characteristics of porous media. Izv. AN SSSR. Ser. khim.
no.11:1967-1975 '65. (MIRA 18:11

1. Institut elektrokhemii AN SSSR.

MYANLIN, Viktor Alekseyevich; PLESKOV, Yuriy Viktorovich; MARKIN,
V.S., red.

[Electrochemistry of semiconductors] Elektrokhimia poluprovodnikov. Moskva, Nauka, 1965. 337 p.
(MIRA 18:7)

MARKIN, V.S.; CHELMADZHEV, Yu.A.

Correlation function of the classical system of charged particles.
Part 1: System of unipolar particles with a neutralizing back-
ground. Elektrokhimiya 1 no.10:1202-1211 0 '65.

(MIRA 18:10)

1. Institut elektrokhemii AN SSSR.

ON 10, 1964, the following information was received:

There is a report of a possible sighting of a
U-2 aircraft in the vicinity of the
1. The aircraft was seen at approximately 10:00 AM.
2. The aircraft was seen at approximately 10:00 AM.

SOV/86-58-9-36/42

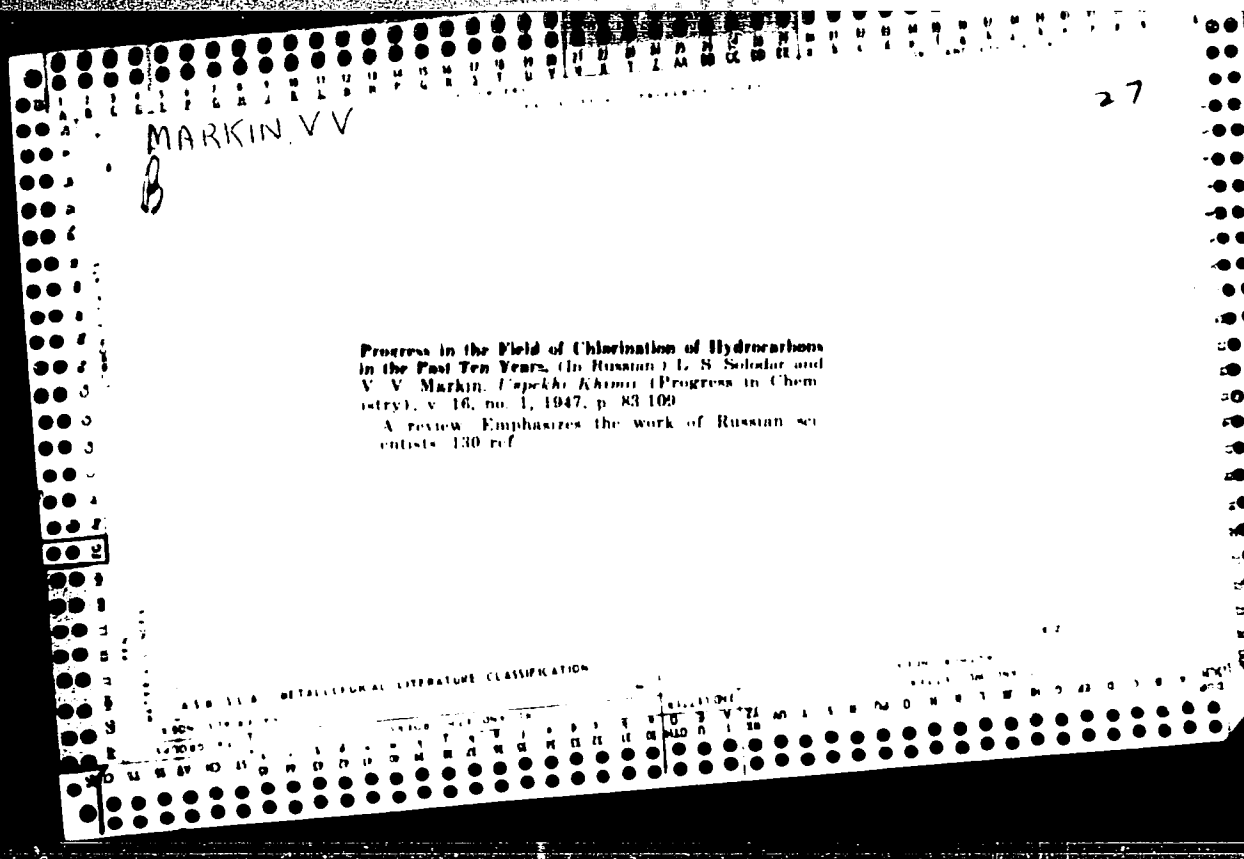
AUTHOR: Markin, V. V., Lt Col, Hero of the Soviet Union,
Military Pilot Second Class

TITLE: Change the Layout of Flight Instruments (Izmenit'
komponovku pilotazhno-navigatsionnykh priborov)

PERIODICAL: Vestnik vozdushnogo flota, 1958, Nr 9, pp 85-86
(USSR)

ABSTRACT: The author recommends that certain changes be made
in the layout of flight instruments on the instrument panel
of fighter aircraft in order to facilitate the pilot's task
during instrument flying. The author describes the necessary
changes. One photo.

Card 1/1



USSR/Organic Chemistry Synthetic Organic Chemistry. E-2

Abs Jour : Ref Zhur - Khimiya, No. 8, 1957, 26722.

Author : Klebanskiy, A L , Markin, V.V,
Chevychalova, K K

Inst :

Title : Synthesis of Basis of 2,4-Dichlorobutene-2
Synthesis of Cyanamide Derivative, Binary
Amine and Its Derivatives

Orig Pub : Zh. obshch khimii, 1956, 26, No 9, 2433 -
2435.

Abstract : The interaction between 2,4-dichlorobutene-
2 (I) and $\text{CaNC}\equiv\text{N}$ (II) in presence of an equi-
valent amount of NaOH results in the formation
of di-(2-chlorobutene-2)-cyanamide (III), the
following hydrolysis thereof produces di-(2-
chlorobutene-2)-amine (IV) 155 g of I in

Card 1/3

USSR/Organic Chemistry. Synthetic Organic Chemistry. E-2
 Abs Jour : Ref Zhur - Khimiya, 1957, 26722

300 ml of alcohol (about 20°) are added to a solution of $\text{Na}_2\text{NH}_2\text{N}$ (of 104 g of industrial 55% II, 310 ml of water, 75 g of ice and 165 g of 35% aqueous solution of NaOH), it is stirred 1.5 hours (cooling) and heated (about 100°) 3.5 hours, and 240 ml of alcohol is distilled off. The residue is cooled and washed with alcohol; the organic layer of the filtrate is separated and C_6H_6 is extracted from its aqueous solution. The yield of III is 55 - 60%, $n_{\text{D}}^{20} = 1.5027$, $d_4^{20} = 1.1161$, melting point 27 to 28° (from aqueous alcohol). A mixture of 120 g of III, 88 g of H_2SO_4 ($d = 1.84$) and 258 ml of water is boiled 6 hours, filtered, dissociated with

Card 2/3

USSR/Organic Chemistry. Synthetic Organic Chemistry. E-2
 Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26722

130 g of NaOH in 240 ml of water. IV, boiling point 104 °C/1 mm. $n_D^{20} = 1.4977$, $d_4^{20} = 1.117$, is received. IV is received also by the hydrolysis of crude III. Di-2-chlorobutene-2) di thiocarbamates of sodium (V) or ammonium (VI) were received by condensation of IV with CS_2 in presence of aqueous solutions of NaOH or NH_3 . 16 g of CS_2 and 40 ml of 18% aqueous solution of NaOH are added to IV, the yield of V is 87% (by iodometric titration). VI is received by the interaction of 20 g of IV, 8 g of CS_2 and 26 ml of aqueous solution of NH_3 (2.08 g of NH_3) (boiling), the yield is 81%.

Card 3/3

MARKIN, V.V., Cand. Geol-Miner. Sci -- (diss) "Devonian and Silurian of the western slope of the ~~pre~~polar Urals." Len. 1958, 210p (Len Order of Lenin State Univ im A.A. Zhdanov) 150 copies. (KL, 41-5c, 120)

MARKIN, Vasil'y Vas'l'yevich; KUZNETSOV, S.S., prof., otv.red.;
KULIKOV, M.V., red.izd-va; KRUGLIKOVA, N.A., tekhn.red.

[Ordovician and Silurian in the western slope of the Polar
Urals] Ordovik i silur zapadnogo sklona Pripoliarnogo Urala.
Moskva, Izd-vo Akad.nauk.SSSR, 1960. 131p. (Akademiia nauk
SSSR. Geologicheskii muzei. Trudy, no. 3) (MIRA 13:8)
(Ural Mountains--Geology, Stratigraphic)

MARKIN, V.V.

Ordovician in the western slope of the sub-Arctic Urals. Trudy Geol.
muz. AN SSSR no.2:136-148 '60. (MIRA 13:10)
(Ural Mountains--Geology, Stratigraphic)

L 36473-66 EWT(m)/ENP(j) RM

ACC NR: AP6027040

SOURCE CODE: UR/0020/65/165/006/1313/1316

AUTHOR: Katayev, Ye. G.; Plemenkov, V. V.; Markin, V. V.ORG: Kazan State University im. V. I. Ul'yanov-Lenin (Kazanskiy gosudarstvennyy universitet)TITLE: Diethylphosphoric acid thionylamide in the diene synthesis reaction

SOURCE: AN SSSR. Doklady, v. 165, no. 6, 1965, 1313-1316

TOPIC TAGS: diene synthesis, phosphoric acid, chloride, organic amide, phenyl compound, isomer

ABSTRACT: The authors attempted to synthesize diethylphosphoric acid thionylamide by treating thionyl chloride with diethylphosphoric acid amide; the attempt was successful, with the formation of (phosphonyl thionylamide) and release of hydrogen chloride following the addition of an equimolar amount of thionyl chloride to a benzene solution of diethylphosphoric acid amide and heating for 30 min. Since aromatic thionylamines, particularly those with electro-acceptor groups in the phenyl nucleus, as well as thionylsulfonamides, react fairly actively with various dienes, it was to be expected that phosphonyl thionylamide also would be an active dienophile; this was confirmed by reaction of phosphonyl thionylamide with various dienes (butadiene-1,3, isoprene, hexadiene-2,4, chloroprene, etc.). It was established that reaction between phosphonyl thionylamide and asymmetrically-substituted dienes is bound to lead to two structural isomers for each reaction. This article was presented by Academician B. A. Arbuzov on 12 April 1965. The authors thank Yu. Yu. Samitov, A. A. Musinaya and E. G. Yarkovaya for the plotting of the nuclear magnetic resonance and infrared spectra and for valuable consultations concerning their interpretations. Orig. art. has: 1 figure and 1 table. [JPRS: 36,455]

SUB CODE: 07, 20 / SUBM DATE: 09Apr65 / ORIG REF: 004 / OTH REF: 006

Card 1/1

L 27502-66 EWT(m)/T/EWP(t)/ETI IJP(c) JH/JD/GS

ACC NR: AT6012369

SOURCE CODE: UR/000G/65/000/000/0048/0055

AUTHORS: Kornilov, I. I. (Doctor of chemical sciences, Professor); Volkova, M. A.;
Pylayeva, Ye. N.; Kripyakevich, P. I.; Markiv, V. Ya.

ORG: none

TITLE: Investigation of equilibrium diagrams of titanium-rich alloys of the system
Ti-Al

27
SOURCE: Soveschchaniye po metallokhimii, metallovedeniyu i primeneniyu titana i yego
splavov, 6th. Novyye issledovaniya titanovykh splavov (New research on titanium
alloys); trudy soveschchaniya. Moscow, Izd-vo Nauka, 1965, 48-55

TOPIC TAGS: titanium, aluminum, alloy phase diagram, titanium alloy, binary alloy,
lattice parameter

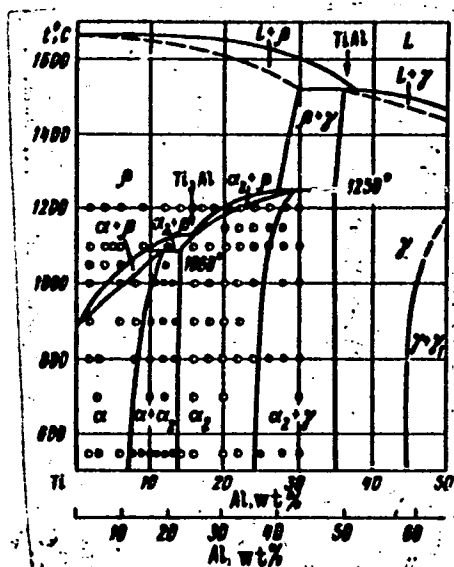
ABSTRACT: The phase diagram of the binary system Ti-Al (containing up to 30% Al) was
determined. The diagram was constructed on the basis of thermal, microstructural,
dilatometrical, and x-ray analysis. In addition, the specific electrical resistance
and hardness of the alloy specimens were determined. The investigation supplements
earlier work of N. V. Grum-Grzhinaylo, I. I. Kornilov, Ye. N. Pylayeva, and M. A.
Volkova, (Dokl. AN SSSR, 1961, 137, No. 3, 599). The experimental results are
summarised in graphs and tables (see Fig. 1) and compared to earlier literature data.
A rearrangement takes place in the alloys in the temperature region from 882 to 1250C.
These temperatures correspond to a transition from a hexagonal close-packed structure

Card 1/3

I 27502-66

ACC NR: AT6012369

Fig. 1. Phase diagram of the system Ti-Al.



to a body-centered structure. The curves for the properties of alloys vs composition exhibit a minimum, the composition of which corresponds to the intermetallic compound Ti_3Al . The existence of the compound Ti_3Al was corroborated by x-ray analysis. The structure of Ti_3Al was found to resemble the Mg_3Cd structure. The lattice parameter

Cond 2/3

L 27502-66

ACC NR: AT6012369

of the system Ti-Al was determined as a function of the composition (see Fig. 2).

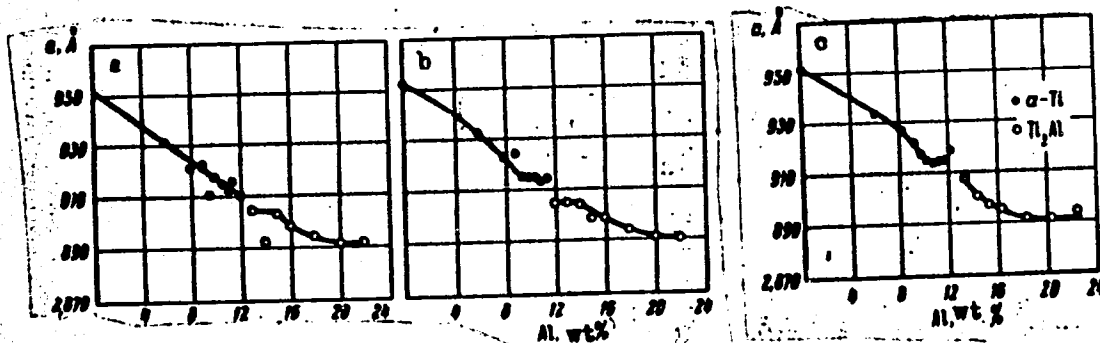


Fig. 2. Dependence of the lattice parameter of the alloy composition of the system Ti-Al annealed at 950C (a), 700C (b), and 550C (c).

Orig. art. has: 1 table and 6 figures.

SUB CODE: 11/ SUBM DATE: 02Dec65/ ORIG REF: 006/ OTH REF: 004

Card 3/3 BLG

MARKIN, Ye.A., SAVCHENKO, V.K.

Vibrations caused by broaching. Stan. : instr. 35 no. 2836-
P164 (MIRA 1 : 1

USSR/Farm Animals. The Swine

Q-4

Abs Jour : Ref Zhur - Biol., No 11, 1958, N. 50079

Author : Shurmukhin, A.F., Markin Ye.F., Guleynanov M.S.

Inst : Sverdlovsk Farm Institute

Title : The Effect of Darkening of the Barn Upon the Intensity of
Fat Deposition in Swine

Orig Pub : Tr. Sverdl. s.-kh. in-ta, 1957, 1, 203-205

Abstract : No abstract

Card : 1/1

AUTHOR: Margan, Ye. P., Sosulev, N. I. 217 10-1000

TITLE: The Infrared Reflection Spectrum of Boron Anhydride at High Temperatures (Infrakrasnyy spektr otrazheniya tverdogo angidrida pri vysokikh temperaturakh)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1977, Vol. 22, Nr 2, pp. 1697 - 1699 (USSR)

ABSTRACT: In previous papers (Ref's 1-3) an account was given of a thorough investigation of the vibration spectrum of boron anhydride. These studies, however, did not cover the infrared absorption spectrum of the molten boron anhydride, as the thin films of the boron oxide coagulated in melting. In this paper the experience gained in the investigation of the infrared reflection spectrum of boron anhydride at high temperatures is presented. For this investigation a special equipment was built, the scheme of which is given in figure 1. In order to eliminate the continuous spectrum which is emitted by the substance under investigation and by the heated furnace a modulation method was employed. In figure 2 the results of the experiments

Card 1/2

The Infrared Reflection Spectrum of Boron Anhydride
at High Temperatures

SV 1-11-72-1

in the temperature range of $20 \pm 1000^\circ$ are given. The infrared fundamental bands found to be emitted by boron anhydride in vitreous state do not vanish in the liquid state up to a temperature of 1000° . This temperature corresponds to a viscosity of 74 poise (Ref 5). These results substantiate the assumption that the molecule B_4O_6 is preserved as a structural unit in the transition from the vitreous state into the liquid state. The information which was recently published by Har and Arrhenius (Ref 6) and the results obtained by the authors validate the maintenance of the molecular structure of boron anhydride in the liquid and in the vitreous state. It is also confirmed that the B_4O_6 molecule belongs to the T_d group of the symmetry T_d .⁴ There are 3 figures and references, 4 of which are Soviet.

ASSOCIATION: Fizicheskii institut im. P.N.Lebedeva Akademii Nauk SSSR
(Institute of Physics imeni P.N.Lebedev AS USSR)

Card 2/2

SECRET

Versy of the book "The Soviet Union and the World" (1971) by the author, V. I. Kuznetsov, is a comprehensive study of the Soviet Union's foreign policy and its role in the world. The book is divided into two main parts: the first part deals with the Soviet Union's foreign policy in the post-war period, and the second part deals with the Soviet Union's foreign policy in the present. The author is a well-known Soviet foreign policy expert and a member of the Soviet Academy of Sciences. The book is written in a clear and concise style, and it provides a detailed and accurate account of the Soviet Union's foreign policy. It is a valuable resource for anyone interested in the Soviet Union's foreign policy and its role in the world.

CONFIDENTIAL: This book contains information that is classified as "Secret" under the provisions of the Soviet Union's laws on state secrets. It is not to be distributed outside the Soviet Union or to any foreign person or organization. The book is a valuable resource for anyone interested in the Soviet Union's foreign policy and its role in the world. It provides a detailed and accurate account of the Soviet Union's foreign policy in the post-war period and in the present. The author is a well-known Soviet foreign policy expert and a member of the Soviet Academy of Sciences. The book is written in a clear and concise style, and it is a valuable resource for anyone interested in the Soviet Union's foreign policy and its role in the world.

Alfred, W. H.	55
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[illegible][illegible]

84683

S.5310

1273, 1160, 1227

S/051/60/009/005/004/019

E201/E191

AUTHORS: Markin, Ye.P., and Sobolev, N.N.

TITLE: The Infrared Reflection Spectra²¹ of Boron Oxide²⁷ and Fused Quartz⁵ at High Temperatures

PERIODICAL: Optika i spektroskopiya, 1960, Vol.9, No.5 pp 582-591

TEXT: Preliminary results on the infrared reflection spectrum of boron oxide at high temperatures were reported at the Eleventh All-Union Conference on Spectroscopy held in December 1957. The present paper deals with the infrared reflection spectra of B₂O₃ (between 21 and 1000 °C). For high-temperature measurements a special attachment to a single-beam spectrophotometer IKS-11 (IKS-11) was constructed (Fig. 1). To avoid recording a continuous spectrum emitted by a sample and the furnace at high temperatures, the infrared beam was modulated by means of a disc (2 in Fig. 1) rotating at 9 rev/sec. Radiation from a Si100 rad (1), modulated by the disc, was focused by means of mirrors (3, 4 and 5) on the surface of a sample (6). The reflected beam was directed by means of mirrors (7-11) onto the entry slit (12) of IKS-11. From IKS-11 the beam proceeded via a mirror (13) to a bolometer (14) which was connected to an amplifier (the circuit is Card 1/3).

84683

S/051/60/009/005/00-4/019

E201/E191

The Infrared Reflection Spectra of Boron Oxide and Fused Quartz at High Temperatures

given in Fig. 2) To prevent the high temperature emission of the sample from being reflected by the modulated disc and thus reaching IKS-11, the disc was covered with a piece of black mat paper. The infrared reflection spectra of solid and liquid B_2O_3 are shown by continuous curves in Figs. 3 and 4 (the dashed curve in Fig. 4 is the absorption spectrum of vitreous B_2O_3). The infrared reflection spectra of fused quartz are shown in Fig. 5 at temperatures from $-190^\circ C$ (solid, curve 1) to $2000^\circ C$ (liquid, curve 6). The temperature dependences of the reflection band positions (λ) and of viscosity (η) are given for B_2O_3 (curve a) and SiO_2 (curve b) in Fig. 6. The main features of the reflection spectrum of solid B_2O_3 were retained in liquid phase. In the case of SiO_2 the most intense band (8.9μ at $-190^\circ C$) was observed both in solid and liquid states. The bands of both substances were displaced somewhat towards longer wavelengths by increase of temperature. These observations show that the main structural units of B_2O_3 and SiO_2 were retained on transition.

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The Infrared Reflection Spectra of Boron Oxide and Fused Quartz
at High Temperatures

from solid (vitreous) to liquid state.

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of Metallurgy imeni Baykov, AS USSR, A. F. Volodin, for his help,
and to A.N. Danil'chenko for his advice.

There are 6 figures and 24 references: 12 Soviet, 6 English,
3 German, 2 Indian and 1 Belgian.

SUBMITTED: February 25, 1960

Card 3/3

MARKIN, E. P., OSIPOV, B. D., BASOV, N. G., KROKHIN, O. N. LISITZEN, L. V.

"On Negative Photoconductivity and the Induced Electron Transitions"

Paper presented at the IUPAP International Conference on Photoconductivity,
Ithaca, New York, 21-24 Aug. 1961.

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B113/B102

9.4177 (1136)

AUTHORS: Basov, N. G., Krokhin, O. N., Lisitsyn, L. M., Markin, Ye.P.,
Osipov, B. D.

TITLE: Negative conductivity in induced transitions

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41,
no. 3(9), 1961, 988-989

TEXT: In indirect transitions the carrier concentration at which a negative temperature occurs relative to the band-to-band transition, is comparatively small. It is by some orders of magnitude lower than the concentration at which a negative absorption coefficient exists for photons with an energy that is comparable with the width of the forbidden band. For the existence of a negative absorption coefficient it is necessary that the probability of induced photon emission in the band-to-band transition considerably exceeds the photon absorption probability in the inverse process in order to compensate also absorption in inner transitions. The processes, however, that are connected with internal absorption practically do not influence conductivity since they do not change the

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Negative conductivity in induced...

total number of free carriers. The band-to-band transitions which are in a state with negative temperature and which were induced by photon irradiation, reduce the number of free carriers and lead to a decrease in conductivity. Hence, the semiconductor which is in a state with negative temperature relative to the band-to-band transition is bound to have negative photoconductivity when irradiated with photons, whose energy is almost equal to the width of the forbidden band. The measurement of the spectral dependence of the semiconductor photoconductivity permits the determination of the states with negative temperatures also with lacking negative absorption coefficient. The authors made experiments for the production and observation of states with negative temperature in silicon. The specimen was irradiated at 4°K with light of a wavelength smaller than 0.7 μ which considerably increased its conductivity. Upon additional irradiation with weak monochromatic light a conductivity reduction (negative photoconductivity) was observed for a series of specimens in a narrow band of wavelengths near 1.1 μ . It can be assumed that the conductivity decrease observed is due to the existence of a state with negative temperature. However, also other explanations, such as impurity photoconductivity, are possible. [Abstracter's note: Essentially

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Negative conductivity in induced...

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complete translation.] There are 3 Soviet references.

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(Physics Institute imeni P. N. Lebedev of the Academy of
Sciences USSR) X

SUBMITTED: July 13, 1961

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S/056/62/043/003/054/067
B104/B102

AUTHORS: Babov, N. G., Markin, Ye. P., Mash, D. I.

TITLE: Some characteristics of neon-helium quantum generator

ABSTRACT: Paper in "Experimental' i teoreticheskoy fiziki", v. 1, no. 3, 1961, 1116-1117

TEXT: The quantum generator shown in the figure is described. The generator is the principle of A. Javan (Phys. Rev. Lett., 3, 57, 1959; 106, 1961). The discharge in the gas mixture is excited by a 0-100 V constant voltage of external electrodes. Interference mirrors with a coefficient of reflection are used. They consist of 13 quarter-wave thin films and argillite. The mirror backings were optical fused quartz with a transmission factor of about 1% for 11,530 Å waves. Power and angular dependence of the 11,530 Å emission were measured. The beam divergence was about one angular minute and the power about 2.2 mW. The latter remained virtually constant throughout the range of the neon-to-helium partial pressure ratios of 1:10-1:4 but decreased when the neon partial pressure was further increased. There is 1 figure.

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Some characteristics of neon-helium...

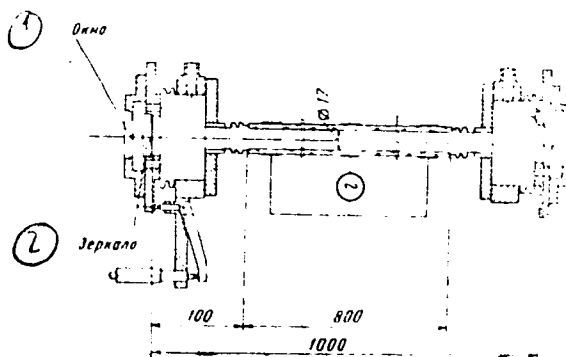
3/056/62, 047-003-006-1
3*04/3102

ASSOCIATION: Fizicheskii Institut im. P. N. Lebedeva Akademii Nauk
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Fig. Quantum generator.

Elements: (1) window,
(2) mirror.



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